

AMENDMENTS TO THE CLAIMS

1 (Currently amended). A three dimensional periodic structure, comprising:

two substances having different dielectric constants periodically distributed in a three dimensional space, wherein at least one of said substances is a solid, and

a discontinuous conductive film having independent conductive particles or clusters of a plurality of conductive particles coarsely distributed therein at an interface between the two substances.

2 (Previously presented) A three dimensional periodic structure according to claim 1, wherein the conductive film has a surface resistivity of about $0.3 \Omega/\text{square}$ or more at an interface between the two substances.

3 (Previously presented). A three dimensional periodic structure according to claim 2, wherein the conductive film comprises a conductive material having a conductivity of about 10^3 S/cm or more.

4 (Original). A three dimensional periodic structure according to claim 3, wherein the conductive film is an electroless plating film on a surface of at least one of the two substances.

5 (Previously presented). A three dimensional periodic structure according to claim 2, wherein the conductive film is an electroless plating film on a surface of at least one of the two substances.

6 (Previously presented). A three dimensional periodic structure according to claim 2, wherein the conductive film comprises Cu, Ni or InSb.

7 (Previously presented). A three dimensional periodic structure according to claim 2, wherein one of the two substances is air and is disposed in a diamond shaped space.

8 (Canceled).

9 (Previously presented). A three dimensional periodic structure according to claim 1, wherein the conductive film comprises a conductive material having a conductivity of about 10^3 S/cm or more.

10 (Previously presented). A three dimensional periodic structure according to claim 9, wherein the conductive film is an electroless plating film on a surface of at least one of the two substances.

11 (Previously presented). A three dimensional periodic structure according to claim 1, wherein the conductive film is an electroless plating film on a surface of at least one of the two substances.

12 (Previously presented). A three dimensional periodic structure according to claim 1, wherein the conductive film comprises Cu, Ni or InSb.

13 (Previously presented). A three dimensional periodic structure according to claim 1, wherein one of the two substances is air and is disposed in a diamond shaped space.